# DST400, DST440 Thermocouple Thermometer System

**DST400 Series** of Digi-Stem thermometers are sturdy, vibration resistant units available in 5 different thermocouple types to cover a wide variety of temperature ranges. The DST400 is the newest generation of thermocouple Digi-Stem's available from Wahl, the successor to our popular DST200 and DST300 series meters. Housed in our rugged stainless steel and polycarbonate case, the DST400 series is popular among users measuring higher temperatures or requiring a tougher instrument. By nature, thermocouples are less fragile than RTD's, making this unit an excellent choice for demanding applications.

**DST400**

**DST440**

| DST400K/DST440K | DST400J/DST440J | DST400T/DST440T | DST400E/DST440E | DST400S/DST440S |
|---|---|---|---|---|
| Type K Thermocouple | Type J Thermocouple | Type T Thermocouple | Type E Thermocouple | Type S Thermocouple |
| -40° to 2500°F | -40° to 2192°F | -40° to 752°F | -40° to 1832°F | 32° to 3200°F |
| -40° to 1371°C | -40° to 1200°C | -40° to 400°C | -40° to 1000°C | 0° to 1760°C |

## FEATURES

### Safety & Security

- Works with your choice of one of 5 user specified thermocouple input types: J, K, T, E or S.

- Select any of the 5 factory programmed Thermocouple inputs at time of purchase, and change to any of the other 4 inputs after purchase with our easy to use optional DSTCAL software[1]. Interchangeable stickers are provided to indicate which thermocouple type is programmed at any given time.

- Ambient Operating Temperature: -40° to 158°F (-40° to 70°C)

- High reliability, Cold Junction Compensation sensor.

- High accuracy 24-bit Delta-Sigma Analog/Digital Converter.

- Error checking: Checks for open wire/sensor, under-range, over-rang conditions and low battery.

- Standard & specialty probes available from Wahl, or compatible with third party thermocouple probes with ½" NPT instrument fitting.

- LCD Screen with easy to read 1 inch high digits. Resolution to 1/10th of 1° below 1000°, and 1° above 1000°.

- Adjustable meter update rate.[2] Powered by a C cell sized Lithium Metal Battery.[3] Four years nominal battery life at default update rate.[4]

- Tamper resistant – Use DSTCAL, our user friendly single point calibration software (sold separately), to set thermocouple type, calibrate the meter and cold junction compensation, and set the sample and display rates.

- Vibration Tolerant

- Meter Accuracy from ±0.5°F (±0.3°C).

- Vibration Tolerant

- Adjustable meter update rate.[5]

- User selectable °F or °C.

### Probes
- Compatible Wahl probes use thermocouple sensors in MgO packed MI cable. Available in rigid straight or 90˚ angle, adjustable angle, and remote mount configuration. All probes use special limits of error wire.

- Sanitary probes are in compliance with 3A Sanitary Standard.

### Enclosure
- NEMA 4X enclosure.

- DST440 has a laser welded stainless steel H-Frame for additional protection against EMI and water ingress.

- Panel mount option is available.

### Certifications
- NIST Traceable Certificate of Conformance is available.

**MADE IN THE USA**

**TWO YEAR 2 WARRANTY**

**TRACEABLE TO NIST**

**A3**

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[1] Requires recalibration of cold junction compensation with a thermocouple calibrator.

[2] Default update rate is 2 seconds unless otherwise specified at time of order. Adjustable from 0.25 seconds to 10 seconds in 0.25 second intervals.

[3] "I" models contain a "AA" size lithium metal battery, in compliance with air transportation regulations regarding lithium metal batteries. "NB" models are sold and shipped without a battery; purchase and install the battery on location.

[4] Low battery is indicated by "LOW BATT" displaying in the lower right corner of the display. When battery discharges, eventually the battery voltage will get low enough to cause an error. The display will switch to "- - -" before that happens.

[5] Default update rate is 2 seconds unless otherwise specified at time of order. Adjustable from 0.25 seconds to 10 seconds in 0.25 second intervals.

| DST400 & DST440 Series Specifications | | | | | |
|---|---|---|---|---|---|
| **Standard Series** | DST400 | | | | |
| **All Stainless Steel, RFI** | DST440 | | | | |
| **Model** | **DST400K / DST440K** | **DST400J / DST440J** | **DST400T / DST440T** | **DST400E / DST440E** | **DST400S / DST440S** |
| **Range** **°F or °C Switchable** | -40° to 2500°F -40° to 1371°C | -40° to 2192°F -40° to 1200°C | -40° to 752°F -40° to 400°C | -40° to 1832°F -40° to 1000°C | 32° to 3200°F 0° to 1760°C |
| **Meter Accuracy Tamb = 23°C ±5°C) (includes CJC error)** | < 1000 = ± 0.5°F, ± 0.3°C > 1000 = ± 2°F, ± 1°C | < 1000 = ± 0.5°F, ± 0.3°C > 1000 = ± 2°F, ± 1°C | ± 0.5°F, ± 0.3°C | < 1000 = ± 0.5°F, ± 0.3°C > 1000 = ± 2°F, ± 1°C | Full Range = ± 2°F, ± 1°C |
| **Resolution** | 1.0" 4-digit display with icons for °F, °C, and low battery. | | | | |
| **Display Resolution** | < 1000 = 0.1°; ≥ 1000 = 1° | | | | |
| **Humidity** | 10 to 100% RH, non-condensing | | | | |
| **Ambient Operating Temperature** | -40° to 158°F (-40° to 70°C) | | | | |
| **Ambient Temperature Coefficient (From 23°C ± 5°C)** | Input: < 200°C, Maximum of: ± 0.02°C/°C Input: > 200°C, Maximum of: ± 0.05°C/°C | | | | |
| **Sensor Lead Resistance** | 1000 ohms Maximum | | | | |
| **Models** | **DST400K / DST440K** | **DST400J / DST440J** | **DST400T / DST440T** | **DST400E / DST440E** | **DST400S / DST440S** |
| **Battery Power** | 1 - C size, Lithium Thionyl Chloride, 3.6V | | | | |
| **Display Update Rate** | 2 Seconds, adjustable in .25 Second intervals to .25 to 10 seconds with software | | | | |
| **Battery Life** | Approximately 4 Years at 2-second sample rate, 1 to >10 years (approximate) when set to .25 to 10 second sample/display rate | | | | |
| **"I" Models*** | **DST400KI / DST440KI** | **DST400JI / DST440JI** | **DST400TI / DST440TI** | **DST400EI / DST440EI** | **DST400SI / DST440SI** |
| **Battery Power** | 1 - AA size, Lithium Thionyl Chloride, 3.6V | | | | |
| **Display Update Rate** | 2 Seconds. adjustable in .25 Second intervals from .25 to 10 seconds sample display rate with software | | | | |
| **Battery Life** | Approximately 4 Years at 2-second sample rate, 1 to >10 years (approximate) when set to .25 to 10 second sample/display rate | | | | |
| **Enclosure** | DST400 - Stainless Steel Enclosure with Polycarbonate H Frame and Window (NEMA 4X) DST440 - All Stainless Steel Enclosure and H Frame with Polycarbonate Window (NEMA 4X) | | | | |
| **Dimensions / Weight** | Dimensions: 5.3"W x 4.3"H x 2.7"D (13.5 x 10.9 x 6.9 cm); Weight: 2 lbs. (1kg) | | | | |
| **Options** | NIST Traceable Certificate of Conformance | | | | |

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## Models

| | |
|---|---|
| **DST400K** | Digi-Stem Thermocouple Meter, Factory configured for **Type K Thermocouple**, -40° to 2500°F (-40° to 1371°C) |
| **DST400J** | Digi-Stem Thermocouple Meter, Factory configured for **Type J Thermocouple**, -40° to 2192°F (-40° to 1200°C) |
| **DST400T** | Digi-Stem Thermocouple Meter, Factory configured for **Type T Thermocouple**, -40° to 752°F (-40° to 400°C) |
| **DST400E** | Digi-Stem Thermocouple Meter, Factory configured for **Type E Thermocouple**, -40° to 1832°F (-40° to 1000°C) |
| **DST400S** | Digi-Stem Thermocouple Meter, Factory configured for **Type S Thermocouple**, 32° to 3200°F (0° to 1760°C) |

## Meter Options

| **Battery Options - if desired, see note to right** | **Note: Battery Options -** DST Meters come standard with a "C" cell battery, ready for ground shipment in the contiguous 48 states and some areas of Canada. For air shipments, either an "I" model with a "AA" battery, or "NB" model with no battery is required to avoid additional charges in compliance with transportation regulations regarding "C" cell lithium metal batteries. |
|---|---|
| International Shipping, ("AA" Battery included) | |
| No Battery incl. Requires local purchase of "C" battery | |
| **Options - If desired** | |
| Panel Mount | |

## Optional Accessories

| **DST400 Series Software, Accessories, and NIST Traceable Certificate of Conformance** | |
|---|---|
| **DSTCAL** | DST400 Series Calibration Software Kit (includes USB Cable, DST/USB Interface Module, and Serial Interface Cable) |
| **DSA3030** | Wall Mount Bracket (for Remote Mount units) |
| **DSA3031** | Wall Mount Bracket (for Remote Mount units) with Grounding Lug |
| **DSA3062** | Spare Lithium Thionyl Chloride "C" Battery, 3.6V, for all DST meters except FM version |
| **12234-03** | Spare Lithium Thionyl Chloride "AA" Battery for "I" versions |
| | Standard Calibration & Firmware Upgrades[2] |
| | NIST Traceable Certificate of Conformance of System & Firmware Upgrades[2] |
| **13146X** | 90 Degree Elbow [3] for Rigid Stem models, Specify X: Back Connection (B), Left (L) or Right Side (R) Mount |

[2] Upgrades if applicable, are included in price.
[3] For Back, Left, or Right Side Mounting, 1) specify Code B - Rigid Stem, under Mounting
 Style, 2) add #13146X - 90 Degree Elbow accessory, and 3) specify X as shown above.

**DST400**

**DST440**

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